ITT ELECTRON TUBE DIVISION
CLIFTON, NEW JERSEY
INTERNATIONAL TELEPHONE AND TELEGRAPH CORPORATION

F-2507 BACKWARD WAVE OSCILLATOR

TENTATIVE

GENERAL

The F-2507 is a voltage-tunable, wide-band oscillator with a minimum output power of 100 milliwatts over its rated operating frequency range. This permanent magnet focused, highly stable device finds applications as a swept signal source in signal generators; master oscillator for frequency diversity transmitters; or typically as a local oscillator in radar or ECM receivers. The tube features a bifilar helix contained in a rugged envelope of simple mechanical design thus providing a highly reliable, compact unit. No cooling is required when the environment is below +60°C ambient temperature.

ELECTRICAL

	TYPICAL	ABSOLUTE	UNITS
Frequency	1.8 - 2.8	Note 1	Gcs
Power Output	110 - 190	100 min.	mw
Power Output Variation	3	4 max.	db
Fine Grain Variation, Note 2	± .8	+ 1 max.	db/100 mc
VSWR	2.5:1	3:1 max.	—
Output Impedance	50	50	Ohms
Heater Voltage	6.3	6.0 min/ 6.6 max.	Volts
Heater Current	0.96	1.2 max.	Amps
Anode Voltage (with respect to cathode)	95	250 max.	Volts
Anode Current	0.15	1.0 max.	Ma
Cathode Current	11.0	15.0 max.	Ma
Helix Voltage (with respect to cathode)	250 to 700	200 to 850	Volts
Helix Current	1.5	3.0 max.	Ma
Cathode Voltage	Zero (Ground)	Zero (Ground)	Volts

	TYPICAL	ABSOLUTE	UNITS
Grid Voltage for no Oscillation (RF Cutoff) (with respect to cathode)	-11	-30 max.	Volts
Collector Voltage (with respect to Helix)	+100	+150 max.	Volts
Capacitance, Cathode to All Electrodes	39	45 max.	$\mu\mu$fd.
Capacitance, Grid to all Electrodes	34	45 max.	$\mu\mu$fd.
Capacitance, Helix to all other Electrodes and Capsule	180	250 max.	$\mu\mu$fd.
Spurious Output Below Signal	50	40 min.	db.

NOTE 1 The F-2507 will operate over the frequency range of 1.782 to 2.828 Gcs. with a 3 db reduction in the rated minimum output power.

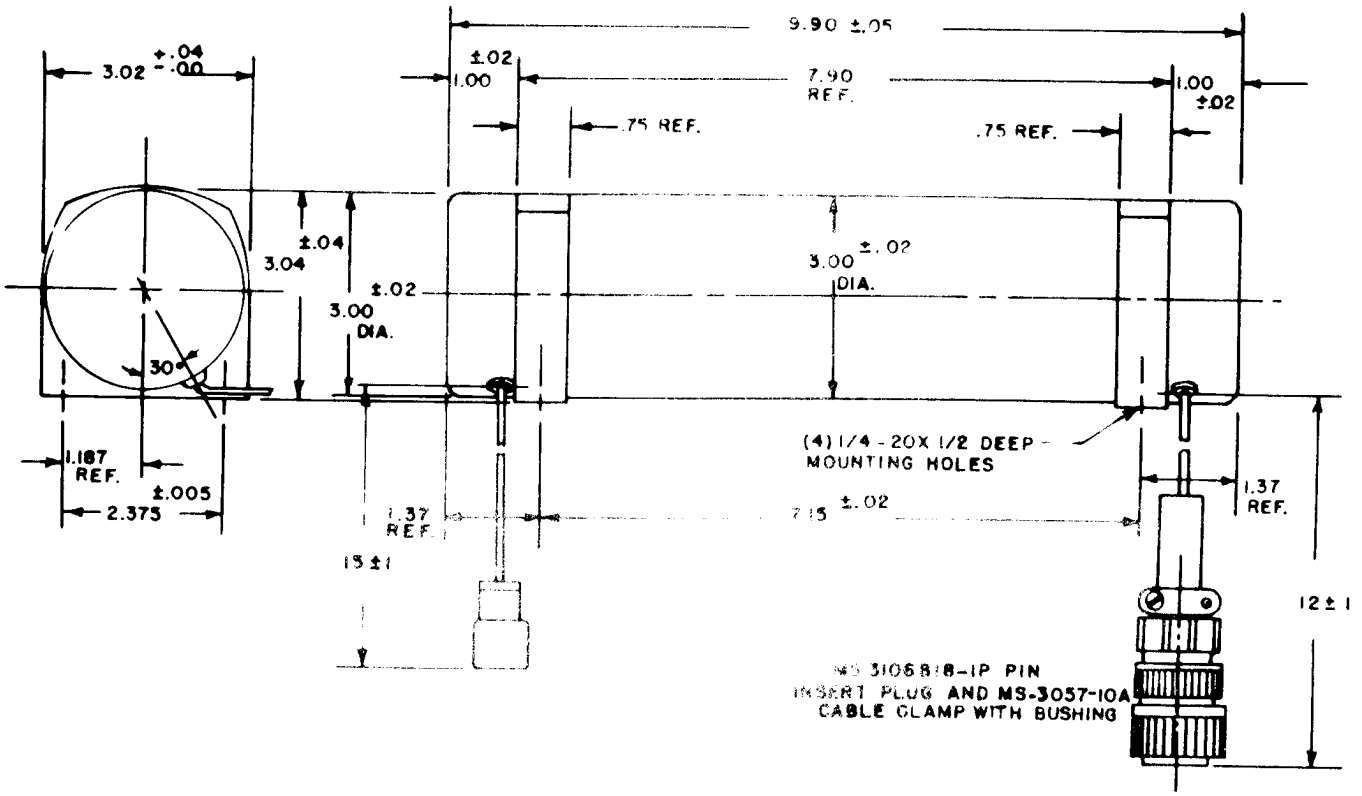
NOTE 2 This value is determined by selecting the 100 mc region of the frequency range which has the greatest differences in power output. The difference between these power levels is divided by two and the plus or minus sign is affixed to denote the difference from an average power level.

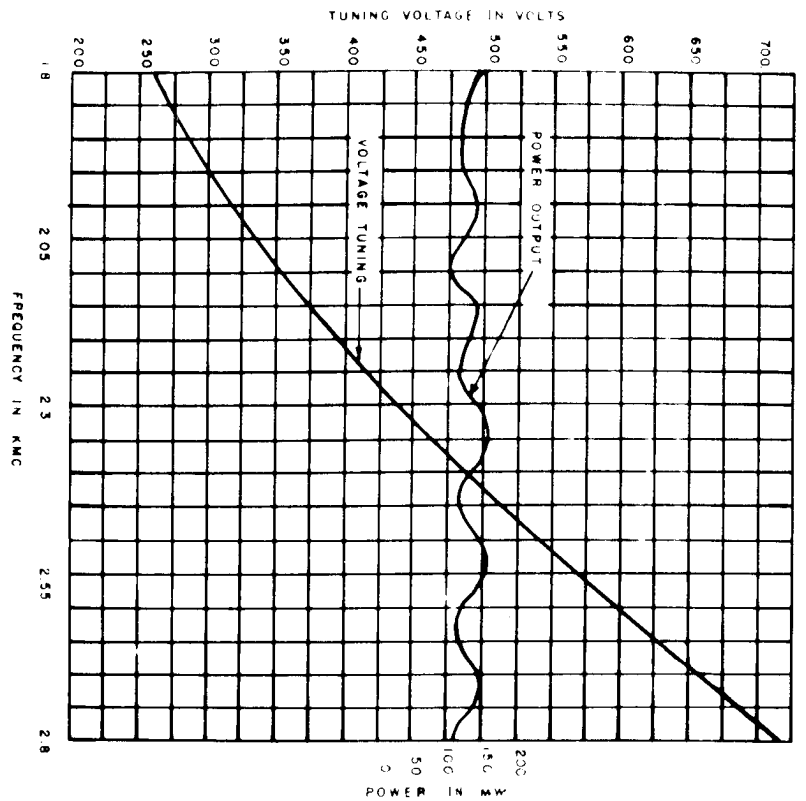
MECHANICAL

Package Length	9.90	9.95 max.	Inches
Package Diameter	3.00	3.02 max.	Inches
Package Weight	9 lbs. -14 oz.	10 max.	Pounds
Power Cable Length (to end of MS 3106B18-1P Plug)	12	11 min/13 max.	Inches
Output Cable Length (to end of Type "N" Connector)	15	14 min/16 max.	Inches

Additional information for specific applications can be obtained from the

Electron Tube Applications Section
ITT Electron Tube Division
Post Office Box 104
Clifton, New Jersey


9.90 ±.05
3.02 +.04 -.00
±.02
1.00
7.90 REF.
1.00 ±.02
.75 REF.
.75 REF.
±.04
3.04
±.02
3.00 DIA.
3.00 ±.02 DIA.
30°
1.187 REF.
±.005
2.375
1.37 REF.
7.15 ±.02
1.37 REF.
15 ±1
12 ±1
(4) 1/4 - 20X 1/2 DEEP MOUNTING HOLES
MS 3106B/8-1P PIN INSERT PLUG AND MS-3057-10A CABLE CLAMP WITH BUSHING


TUNING VOLTAGE IN VOLTS
200
250
300
350
400
450
500
550
600
650
700
VOLTAGE TUNING
POWER OUTPUT
FREQUENCY IN KMC
2.8
2.55
2.3
2.05
1.8
0
50
100
150
200
POWER IN MW